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(54) FLOOR SHAPE ESTIMATING DEVICE FOR LEG
TYPE MOBILE ROBOT

(57) Abstract:

PROBLEM TO BE SOLVED: To accurately estimate the shape of a floor on which a leg type mobile robot, particularly a biped walking robot, is trodden, and generate floor reaction as desired by absorbing influence when the floor shape is different from what is assumed.

SOLUTION: In a floor shape estimating apparatus 130, floor shape, more concretely estimated leg-to-leg floor inclination deviation θ_{fd} , bestmv, is estimated on the basis of at least the control deviation of total floor reaction moment (compensatory total floor reaction moment M_{dmd}), and a both-leg compensation angle θ_{dbv} is corrected on the basis of the estimate. Further, floor shape, more concretely estimated each-foot sole floor inclination deviation $\theta_{fnestmx}$, y, are estimated on the basis of at least the control deviation of each foot sole floor reaction moment around a target each-foot sole floor reaction center

point, and each of foot sole compensation angles θ_{nx} , y is corrected on the basis of the estimate.

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